

A Key to the Subfamilies of Phasmida

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With the increasing interest, particularly amongst amateurs, in the insects of the order Phasmida (stick and leaf insects) it seems timely to make available a key to the main subgroups. No such key has been published in English, but several have appeared in German. The key given below is taken without modification from Beier (1968), selected because it is the most recent full key to the order.

Key to Families

1. On the underside of the end of the tibiae is an approximately triangular, more or less depressed and sharply defined region, the apical area (see Fig. 1) Phylliidae
- Tibiae lacking such a region Phasmatidae

Key to Phylliidae

1. Not strikingly leaflike; abdomen with at the most small side lobes and not appearing strongly compressed; antennae not noticeably sexually dimorphic 2
- Strikingly leaflike; abdomen with large side lobes and appearing strongly compressed; femora and often also the tibiae lobed; male antennae long and bristled; female antennae scarcely as long as the head; male elytra scarcely as long as the thorax; female elytra almost cover the entire abdomen Phylliinae
2. Tarsi 5-jointed 3
- Tarsi 3-jointed; small; wingless; confined to California Timeminae
3. Apical areas of the four hind tibiae never extended into spines; femora sometimes quadrangular in section, but not regularly spined; mesonotum at least as long as the metanotum; wings or wing rudiments mostly present ... 4
- Apical areas of the four hind tibiae often extended into spines, in which case the body has wing rudiments and the femora are almost always quadrangular and regularly strongly spined; alternatively the mesonotum is significantly shorter than the metanotum with wings absent 6
4. The underside of the claws without fine comblike serrations; elytra, if present, never scalelike 5
- The underside of the claws with fine comblike serrations; elytra, if present, small, scalelike and pointed Aschiphasmatinae

5. Femora indistinctly quadrangular, without a mid ventral keel, and not spiny; fore femora not compressed at the base; ocelli always absent; antennae very thin, as long as the body, indistinctly jointed Korinninae
Femora usually distinctly quadrangular and with a distinct, often spiny, mid ventral keel, or the fore femora distinctly compressed, especially basally; if the femora are without a keel then ocelli or wings are present Pseudophasmatinae
6. Antennae distinctly longer than the fore femora; winged or wingless 7
Antennae shorter than the fore femora (except *Xylica*); always wingless Bacillinae
7. Wingless; prosternum never with rough double humps; apical area always without spines Pygirhynchinae
If completely wingless, then the prosternum has a rough double hump and the apical area lacks spines; when winged or with wing rudiments the apical area always has small spines Heteropteryginae

Key to Phasmatidae

1. Antennae powerful and distinctly jointed, usually shorter than the fore femora but never as long as the body; in those with long antennae the ventral keel of the four rear femora is distinctly and evenly serrated or toothed and the animals are winged, or their mesonotum is at least as long as the metanotum 2
Antennae threadlike and indistinctly jointed, especially beyond the middle, longer than the fore femora, often body length; ventral keel of the four rear femora not evenly serrated, usually only with a few distal teeth or completely unarmed; wingless, mostly thin, sticklike animals 9
2. Antennae either longer than the fore femora, or those of the female at least distinctly serrated dorsobasally; wings or wing rudiments present or absent 3
Antennae distinctly shorter than the fore femora; ventral edge of all femora smooth; sticklike or sturdy animals, if sturdy rather small and mostly smooth; male terminal segment not cleft or drawn out into lobes Pachymorphinae
3. Fore femora distinctly quadrangular and serrated on the dorsal edge, or rarely 3-edged and then completely smooth (exceptions occur in some of the wingless Phibalosomatinae) 4
Fore femora 3-edged, at least dorsobasally serrated; wings or wing rudiments exist, or alternatively the mesonotum is longer than the metanotum (some Indian forms with dorsobasally smooth fore femora and a short mesonotum have the terminal segment of the male cleft and drawn out into two lobes) Phasmatinae

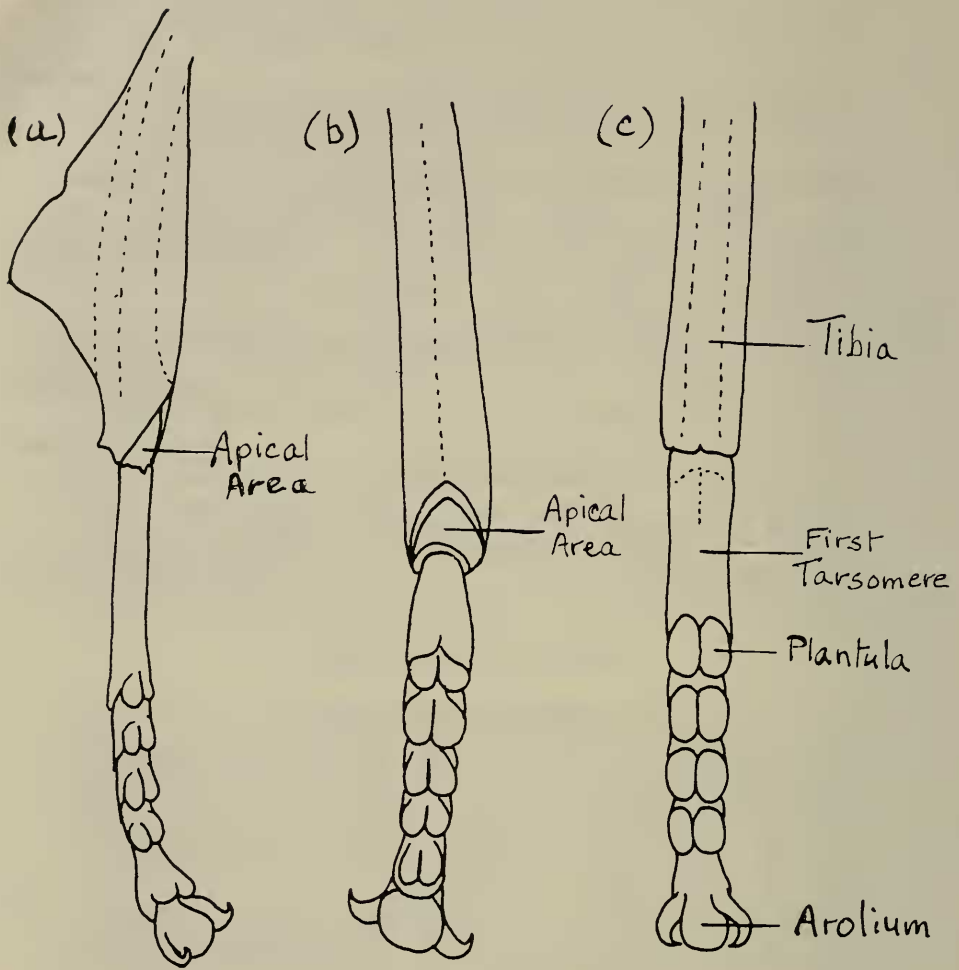


Figure 1: Undersides of the ends of the middle legs of (a) *Phyllium*, Phyllidae; (b) *Anismorpha*, Phyllidae; (c) *Carausius*, Phasmatidae, to show the location of the apical area.

- 4. Old World forms, predominantly from the Indo-Australian area 5
 New World forms (one genus in Madagascar); female genital operculum more or less extended and protruding from the end of the abdomen Phibalosomatinae
- 5. Female operculum and supraanal plate do not form a beak-shaped ovipositor; hind femora of the male never noticeably thickened and spined 6
 Female operculum and supraanal plate form a beak-shaped ovipositor; hind femora of the male often noticeable thickened and strongly spined Eurycanthinae
- 6. Ventrolateral edge of the mid and hind femora finely serrated, finely toothed or smooth; base of the fore femora not compressed 7
 Femora at least partly edged with blunt teeth or lobes; fore femora often distinctly compressed Xeroderinae

7. Gena not broader than an eye; elytra and wings usually well developed, the former relatively long, slender, oval, and only weakly curved 8
 Gena broader than an eye; elytra and often also the wings short or absent Platycraninae
8. Head without lobes; forms from Australia, New Guinea and Madagascar Podacanthinae
 Head with two parietal lobes; forms from Central and South Africa Palophinae
9. Wingless (except *Phantasca*); mesonotum almost always shorter than the metanotum 10
 Winged or with distinct wing rudiments; if wingless then the mesonotum is longer than the metanotum, or at least the terminal segment of the male is not cleft and the female has no beak-shaped ovipositor Necrosciinae
10. Male terminal segment never cleft and extended into lobes Heteronemiinae
 Male terminal segment cleft and extended into two lobes, which narrow in side view towards the rear, or at least have two finger-shaped curved medioventral processes Lonchodinae

References

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Lepidoptera on Hoy, Orkney

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In July 1973, accompanied by my wife, I returned to Hoy to try to add to the list of Lepidoptera on the island. A visit in June 1969 had resulted in several new Orkney records and in particular substantiated the suggestion by Mr. Ian Lorimer that Berriedale, in the hilly north part of the island, was likely to be of special interest.

On this occasion we rented a cottage at Saltness in the south of Hoy. We had a car and there is an adequate road up the east side with a branch westward to Rackwick in the north. We stayed from 21st July to 1st August. The weather was initially fairly sunny but deteriorated around the 26th, with a change to a northerly wind and colder conditions. Forty-three species of Macrolepidoptera were identified. Of these a number were confirmations of 19th century records. Among them was *Eupithecia goosensiata* Mab. which had hitherto seemed of dubious occurrence. *Tethea duplaris* L. is new to the Orkney list although it is known from the Shetlands. A thorough search was made for *Lycaena phlaeas* L. as South records the insect